

How To Guide: Deploy clean transportation technologies

This activity combines technology deployment strategies with education and outreach to increase the number of alternative fuel vehicles (AFVs) deployed.

The transportation sector has an enormous impact on our economy, our national energy security, and our environment. Transportation accounts for 66% of the U.S. annual petroleum consumption and oil imports comprise 35% of the merchandise trade deficit. Moreover, emissions from vehicles are the single largest contributor to air pollution in many cities, making the air unhealthy to breathe and increasing health care costs. States can improve air quality and boost economic activity through deployment of clean transportation technologies.

Linking the economic driver of increasing petroleum price to the environmental driver of air quality concerns will expand the basis of support for adoption of alternative fuel vehicles.

Desired Outcome:

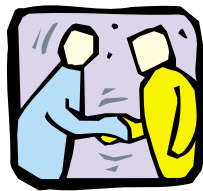
Expand the fleet of clean transportation technologies, with an infrastructure to support them. Increase consumption of alternative fuels to avoid harmful emissions, reduce the nation's dependence on oil imports, and increase public awareness of benefits of clean energy technologies.



Program Design

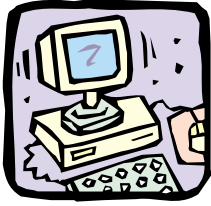
Steps

1. Establish baseline data (fuel usage patterns, number of AFVs currently deployed, existing infrastructure); determine program goals and target market.
2. Conduct inventory of other State transportation projects and look for linkages.
3. Identify EPAAct and CAAA-required vehicles and target for program.
4. Identify and recruit fleet and vehicle operators inclined to use alternative fuels, particularly fleet operators: taxis, delivery services, shuttle services, transit buses, airport ground fleets, school bus fleets, and national park vehicles.
5. Create incentives for infrastructure and vehicles including: provide technical training; facilitate construction of fueling stations; offer tax benefits for AFV purchase or conversion; allow HOV lane access for AFVs; waive vehicle license tax or sales tax for AFVs.
6. Integrate with DOE's Clean Cities program; build on experience and link efforts.
7. Educate potential users on benefits of AFVs.
8. Identify partners and collaborate to build coalition support and deploy technologies.
9. Participate in AFV promotions, e.g., Clean Cities sponsored 75-100 "Advancing the AFV Choice" events around the country in FY 2000.
10. Monitor and publish results (fuel use impacts, number of vehicles, emission reductions, etc.).
11. Incorporate program into State Implementation Plan (SIP).
12. Adapt program to technology changes.
13. Implement sunset incentives after goal is reached.



Partners and Possible Incentives

- **Auto dealers, conversion companies, fuel providers:** Increased sales, increased public awareness of AFVs through high-profile demonstrations.
- **Fleet operators (federal/State/local government and corporate):** Federal and State tax benefits.
- **Environmental groups, health associations:** Reduced emissions, cleaner air and water.
- **Utilities:** Increased sales in alternative fuels (natural gas and electricity).
- **Universities, schools:** Alternative fueled, less polluting buses; energy efficiency education; technical training.



Resources Available

- DOE Clean Cities (www.ccities.doe.gov) Working in over 60 communities to promote alternative fuels and new vehicle technologies to reduce air pollution and oil consumption. Clean Cities Clearinghouse provides information about vehicle manufacturers and distributors, fueling stations, success stories, and repair sites, as well as publications. (Call toll free: 1-800-ccities.)
- DOE Alternative Fuels Data Center (www.afdc.doe.gov)
- AFV Fleet Buyer's Guide web site (www.fleets.doe.gov)
- SEP Special Projects grants (www.eren.doe.gov/buildings/state_energy)
- Federal programs promoting transportation choices (www.livablecommunities.gov/toolsandresources/transportation.htm)
- Congestion Mitigation and Air Quality Improvement Program (www.catsmpo.com/progs/cmaq)
- Model Year 2000 Fuel Economy Guide (www.fueleconomy.gov)
Published jointly by DOE and EPA, gives consumers tools to compare fuel economy (AFVs and advanced technology vehicles are included).
- Financing through State or local agency fleet operations budgets.
- Utilities, AFV manufacturers, and AFV coalitions may provide financing.
- Department of Transportation's Transportation Equity Act (TEA-21) monies can be secured through State transportation agencies or metropolitan planning agencies.
- Other federal agencies, e.g., Environmental Protection Agency, Department of Interior's Green Energy Parks, may provide resources.



Resources Needed

- Funding for training, materials, demonstrations, staff
- Technical expertise to facilitate technology deployment
- Land and partners for infrastructure development
- Support from State legislature (for tax benefits, any zoning changes, etc.)
- Support for State coalition



Key Conditions/ Factors

- Concentration of vehicles
- Alternate fuel availability
- Technology availability and reliability



Special Opportunities for Success

- Air quality non-attainment areas
- Abundance of AFV fuel stocks, i.e. corn States
- High visibility events in State, e.g., Olympics, Super Bowl



Success Boosters

- Supportive utilities
- Broad, strong coalition
- Strong champion at the State and local level
- Financial resources



Technology Transfer Plan

- Develop and publish State-specific program information
- Present program details and program results to all partners and policymakers
- Post results on web site



Barriers and Potential Solutions

- **Lack of vehicle availability:** Partner with manufacturers to increase supply.
- **Low gasoline prices:** Emphasize environmental benefits and national security issues (dependence on imports).
- **Fleet manager inertia:** Educate on benefits of AFVs.
- **Lack of political driver:** Educate public and policymakers on benefits of AFVs; demonstrate link between AFV benefits and other policy goals.
- **Large incremental cost of AFVs:** Create financial incentives and financing mechanisms.
- **Lack of consistent payment methods for fuels:** Work with partners in State and Region to create standardized system.



Metrics

Primary:

- Changes in fuel consumption (reduction in oil, increase in alternative fuel) measured in Gges (gallon of gasoline equivalent)
- Increase in number of AFVs in use

Additional Indicators:

- Increased sales of AFVs and hybrid vehicles
- Number of fueling stations
- Estimated emissions reductions
- Jobs created, other economic impacts
- Number of vehicles replaced with AFVs



Case Studies/Examples

Maryland

The Maryland Energy Administration is working to simultaneously augment the statewide refueling infrastructure for alternative fuels and promote conversions or purchase of dedicated vehicles using alternative fuels. Maryland is also helping to develop a universal refueling card system.